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ARMORED FORCE MEDICAL RESEARCH LABORATORY
Office of the Commanding Officer
Fort Knox, Kentucky

Project No. 2-5
File No. 430.2

October 22, 1942

TEST OF THE ADEQUACY OF K-2 RATION IN THE DESERT

1. PROJECT - Test of the K-2 Ration.

a. Authority: Letter Commanding General, Armored Force Headquarters, Fort Knox, Kentucky, GNCHD 400.112/6, dated September 24, 1942.

b. Purpose: To determine for the Desert Warfare Board the acceptability, stability, packaging, satisfying qualities and undesirable effects of the K-2 Ration.

2. DISCUSSION. Special rations adapted for combat operations need certain modifications for desert warfare. These result from the environment with its high temperatures, scarcity of wood for fuel, enhanced requirements for water and salt for personnel and miscellaneous conditions peculiar to different desert regions. The present test was carried out on the K-2 Desert Ration developed by Colonel Isker of the D.M.C. It differs from the K-1 Ration only in having the fruit juice in individual cans, packed with the ration in a single package for each meal for each soldier. Observations were made by selected medical officers on the use of rations, their acceptance, and the general reaction to the ration during a 5-day field exercise. Comment cards were filled out by the officers and enlisted men from selected companies of the 3rd Armored Division during maneuvers September 20-26, 1942 in the Desert Training Area, California. These included a company of engineers, infantry, artillery and tanks (light). Special studies on water restriction, water intake without restriction, urine and chlorine output were made on the personnel of a tank company and will be the subject of a separate report. Owing to the exigencies of field conditions some meals were missed because supply vehicles were captured. When cards were incompletely or carelessly filled out they were not included in the analysis.

3. CONCLUSIONS.

a. Commendations.

- (1) The K-2 ration was by far the best used in the field to date.
- (2) Fairness of distribution was specifically commended.
- (3) Better packaging and sanitary arrangement was commented on favorably.

(4) The ready availability of the ration was particularly valuable for the changing activity of combat. Part or all of the ration could be consumed during a lull; or portions saved for some later period.

(5) Many preferred it to the "B Ration" and ate it by choice where the two were offered, after the test period.

(6) Certain line officers commented that the men had more energy and worked better toward the end of the day. This may, however, have been a result of conditioning.

b. Specific Complaints.

(1) K-1 and K-2 biscuits: "lousy", "hard", "tasteless", "flavored with chewing gum", "nauseating", "can't eat", etc.

(2) Meats: "too greasy", "tiresome", "too rich".

(3) Bouillon: "too bitter", "tastes like brine", "no good when luke warm--good when hot".

(4) Dextrose malted-milk and dextrose: "too hard", "can't eat", "chalky", "too many sweets".

(5) U. S. Army Field Ration D "too rich", "oily", "greasy", "can't eat all at once".

c. Side Effects.

(1) Constipation: It was generally noted that the ration was constipating, which was to be expected with the low residue, concentrated food with high cheese content. This complaint became more pronounced during the 3rd, 4th and 5th days.

(2) Nausea and vomiting: Four instances of vomiting were attributed to the ration during the entire test. Other factors, however, could not be ruled out.

(3) Increased water requirement: When no restriction was placed on the water intake it averaged 1.2 quarts per day more than on the 5-in-1 ration.

d. Suggestions.

(1) Develop new meals. Monotony by the end of 5 days is marked. Canned beef and other meats might be tried.

(2) Variety in brands of cigarettes, or use of unmarked packages would be of value.

(3) The cans of juice would take up less room if rectangular. The tomato juice should have the ironic admonition "chill before using" removed. The use of pineapple, berry and vegetable juices might be tried.

(4) Other hard candies might be used instead of the dextrose and malted milk tablets. The effect of medicated candies on thirst should be tested.

(5) U. S. Field Ration K-2, modified for Desert Warfare is an excellent emergency ration for Desert Warfare operations of the Armored Forces.

4. RECOMMENDATIONS.

a. With the following changes, U. S. Field Ration K-2 modified for Desert Warfare, is recommended as a reserve and emergency ration:

(1) Change the K-1 and K-2 biscuit. They were eaten by less than half of the men. Salteens, soda crackers, cheese crackers, graham crackers or sweet wafers might be tried.

(2) Change the cheese from the supper to the lunch unit.

(3) Cocoa, a great favorite, should be substituted for the powdered soup.

(4) Add a fruit bar for laxative purposes.

Note: A detailed report including analysis of questionnaire, observations on water intake, environmental temperatures and miscellaneous data are on file at the Desert Warfare Board, Camp Young, Indio, California and the Armored Force Medical Research Laboratory, Fort Knox, Kentucky.

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NO. 3

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